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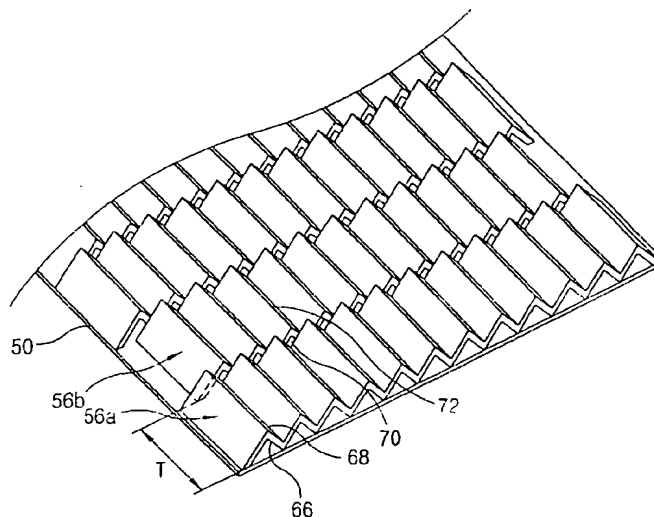
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- Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: HEAT EXCHANGER OF VENTILATING SYSTEM



(57) Abstract: A heat exchanger of a ventilating system includes a plurality of heat exchange plates (50) which are laminated at a predetermined interval, a first heat exchange portion (52) which is positioned among the heat exchange plates (50) and through which outdoor air passes and a second heat exchange portion (54) which is positioned among the heat exchange plates (50) in turn with the first heat exchange portion (52) and through which indoor air passes. The first and second heat exchange portions are composed of a plurality of heat exchange members (56A, 56B) having a predetermined length, and an inner surface of one heat exchange member and an outer surface of the other heat exchange member are aligned to face each other. Accordingly, the heat exchanger can improve heat transfer performance by restraining development of a boundary layer by improving air flowing structure of the heat exchanger.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 2002/002264

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: F28F 3/02, F28F 3/04, F28D 9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: F28F, F28D, F24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 59 167696 A (MATSUSHITA SEIKO) 21 September 1984 (21.09.1984) <i>figs. 1-7 and description.</i>	1-7
X	JP 08 145587 A (MITSUBISHI ELECTRIC) 7 June 1996 (07.06.1996) <i>fig. 27 and description.</i>	1-3
X	GB 1556315 A (SULZER BROTHERS) 21 November 1979 (21.11.1979) <i>fig., description.</i>	1,2,7
X	US 4460388 A (FUKAMI et al.) 17 July 1984 (17.07.1984) <i>fig. 10 and description.</i>	4-6
X	JP 2000 356494 A (MATSUSHITA SEIKO) 26 December 2000 (26.12.2000) <i>abstract, fig 2 and description.</i>	8-11

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

6 June 2005 (06.06.2005)

Date of mailing of the international search report

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Name and mailing address of the ISA/AT

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International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 11 337276 A (SEKI THERMAL) 10 December 1999 (10.12.1999) <i>abstract, fig 1 and description.</i>	8-11
X	US 5655600 A (DEWAR et al.) 12 August 1997 (12.08.1997) <i>fig. 1 and description.</i>	8-11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 2002/002264**Box I** Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

I: Claims 1-7: Heat exchanger mainly embodied by structure of heat exchanging members of corrugated shape.

II: Claims 8-11: Heat exchanger mainly embodied by air path structure enabled by embossing protrusions.

Said heat exchanger structures I and II are completely different embodiments which are not linked to form an single inventive concept.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR 2002/002264

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
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JP	A	20003564 94A2		none			
JP	A	59167696 A2		none			
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				JP	U	58015877U	1983-01-31
US	A	5655600	1997-08-12	US	A	5845399	1998-12-08